REMARKS

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Claim Status / Explanation of Amendments

Claims 1-10 are pending and were rejected. As to the merits, claims 1-4, and 9-10 were rejected pursuant to 35 U.S.C. §103(a) as allegedly being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of U.S. Patent No. 5,355,164 to Shimoyama, et al. ("Shimoyama") and further in view of Japanese Patent Application No. JP 04-37166 A to Tetsuji ("Tetsuji"). [11/5/07 Office Action, p. 6]. Claim 5 was rejected pursuant to 35 U.S.C. §103(a) as allegedly being unpatentable over AAPA and Shimoyama in view of Tetsuji and further in view of U.S. Patent No. 6,353,223 to Ookawa ("Ookawa"). [11/5/07 Office Action, p. 12]. Claims 6 and 8 were rejected pursuant to 35 U.S.C. §103(a) as allegedly being unpatentable over AAPA and Shimoyama in view of Tetsuji and further in view of U.S. Patent No. 6,304,292 to Ide, et al. ("Ide"). [11/5/07 Office Action, p. 13]. Claim 7 was rejected pursuant to 35 U.S.C. §103(a) as allegedly being unpatentable over AAPA and Shimoyama in view of Tetsuji and further in view of U.S. Patent No. 6,700,609 to Abe ("Abe"). [11/5/07 Office Action, p. 14].

By this paper, claims 1 and 9 are amended. Claim 1 is amended to recite, *inter alia*, a first correction unit adapted to DC recovery signals of the effective pixel area "by subtracting the first reference signal with respect to each corresponding horizontal line." A similar and conforming amendment is made to independent claim 9. Support for the changes to claims 1 and 9 can be found throughout the application as originally filed including, for example, p. 16, ln. 2 to p. 17, ln. 12.

No new matter will be introduced into this application by entry of these amendments. Entry is respectfully requested.

B. Claims 1-4 and 9-10 are Patentable over AAPA in view of Shimoyama and further in view of Tetsuji

Applicant respectfully traverses the rejection of claims 1-4 and 9-10. As set forth in detail below, AAPA, Shimoyama, and Tetsuji do not teach, disclose, or suggest each and every element of these claims. In particular, the cited references fail to disclose a first correction unit which DC recovers signals of the effective pixel area by subtracting the first reference signal with respect to each corresponding horizontal line. Accordingly, the Section 103 obviousness rejection is respectfully traversed.

AAPA discloses, *inter alia*, that the signals of the effective pixel area are clamped based on the signal from a horizontal optical black area with respect to each line. As recognized and asserted by the Office Action, AAPA does not disclose a "first reference signal for DC recovery," that a "pixel in the first reference pixel area is shielded from light and does not have a photoelectric conversion element," along with a "first correction unit adapted to DC recovery signals of the effective pixel area based on the first reference signal" as recited in Applicant's pending claim 1. [11/5/07 Office Action, p. 7].

The Office Action attempts to remedy these deficiencies through the introduction of Shimoyama and Tetsuji, contending that Shimoyama teaches Applicant's first reference signal for DC recovery and correction unit adapted to DC recover signals of the effective pixel area based on the first reference signal [11/5/07 Office Action, p. 7-8] while Tetsuji teaches that a pixel in the first reference area is shielded from light and does not have a photoelectric conversion element [11/5/07 Office Action, p. 8-9]. In one aspect, Shimoyama discloses that:

> Up until now, a dark current is measured by using the dummy pixels DC with the mask 1A provided on the surface of the linear sensor 1, and a read signal is corrected by using the dark current. In the present invention, signals of the blind pixels BC which are provided on both ends of the linear sensor 1, do not have a sensor function, and are used as dark current correcting signals and the average value of the blind pixels of a plurality of lines are used. [Shimoyama, Col. 3, lns. 55-63].

That is, Shimoyama corrects the read signal by using the signal obtained from the blind pixels instead of the dummy pixels (i.e., from Applicant's first reference pixel area). Furthermore, Shimoyama teaches that signals of a single line are corrected using a dark current value obtained by averaging a plurality of lines. Thus, Shimoyama does not teach Applicant's first correction unit adapted to DC recover signals of the effective pixel area based on the first reference signal with respect to each corresponding horizontal line.

The Office Action affirms this assertion, but contends that the limitation wherein DC recovery of the image is performed by *subtracting* the first reference signal with respect to each corresponding horizontal line has not been incorporated into the claim language. [11/5/07 Office Action, p. 3-4]. In response, Applicant has amended claim 1 for further clarity such that it now recites, *inter alia*, the limitation comprising a "first correction unit adapted to DC recovery signals of the effective pixel area by subtracting the first reference signal with respect to each corresponding horizontal line."

Tetsuji discloses that optical signals are obtained only by calculating output signals of an effective pixel area I (optical signal + dark current of a light receiving portion + dark current of a vertical shift register + dark current of a horizontal shift register + increased signal 1 of the vertical shift register), output signals of an optical black area II whose overall area is shielded from light (dark current of a light receiving portion + dark current of a vertical shift register + dark current of a horizontal shift register + increased signal 2 of the vertical shift register), and

output signals of an optical black area III which has no light receiving portions with the overall area being shielded from light (dark current of a vertical shift register + dark current of a horizontal shift register + increased signal 1 of the vertical shift register). However, Tetsuji fails to remedy deficiencies in AAPA and Shimoyama and thus also fails to teach a first correction unit adapted to DC recover signals of the effective pixel area by subtracting the first reference signal with respect to each corresponding horizontal line.

Accordingly, AAPA, Shimoyama, and Tetsuji - whether alone or in combination - fail to teach, disclose, or suggest a "first correction unit adapted to DC recovery signals of the effective pixel area by subtracting the first reference signal with respect to each corresponding horizontal line" and a "second correction unit adapted to DC recovery signals of the effective pixel area while evenly subtracting a representative value based on the second reference signal from each signal of a plurality of horizontal lines" as recited in Applicant's amended claim 1. Applicant respectfully submits that claim 1 is patentably distinct from AAPA, Shimoyama, and Tetsuji for at least this reason. Independent claim 9 incorporates the same limitations and, hence, is asserted to be patentably distinct for at least similar reasons. Since claims 2-4 and 10 depend either directly or indirectly from claims 1 and 9, respectively, they are all allowable for the same additional independent reasons set forth with respect to claims 1 and 9. Accordingly, the Section 103 rejection of claims 1-4 and 9-10 should be withdrawn.

C. Claims 5-8 are Patentable over AAPA and Shimoyama in view of Tetsuji and further in view of the Cited References

Applicant respectfully traverses the rejection of claims 5-8 under 35 U.S.C. § 103(a) as allegedly being unpatentable for obviousness over AAPA and Shimoyama in view of Tetsuji and further in view of Ookawa, Ide, or Abe. For at least similar reasons as stated above and for the

quaternary references failing to overcome the deficiencies of the primary, secondary, and tertiary references, claims 5-8 are asserted to be patentably distinct. Accordingly, Applicant respectfully traverses the Section 103 rejection of claims 5-8 over AAPA and Shimoyama in view of Tetsuji and further in view of Ookawa, Ide, or Abe. It is respectfully submitted that all of the pending claims are now allowable for the above reasons and early, favorable action in that regard is respectfully requested.

Applicant has chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Likewise, Applicant has chosen not to swear behind the references cited by the Office Action, or to otherwise submit evidence to traverse the rejection at this time. Applicant, however, reserves the right, as provided by 37 C.F.R. §§ 1.131 and 1.132, to do so in the future as appropriate. Furthermore, Applicant has not specifically addressed the rejections of the dependent claims. Applicant respectfully submits that the independent claims from which they depend are in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicant, however, reserves the right to address such rejections of the dependent claims in the future as appropriate.

CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5187.

Respectfully submitted,
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Dated: February 1, 2008

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